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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,019	04/27/2005	Petrus Maria De Greef	NL02 1118 US	1683

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EXAMINER

ABDIN, SHAHEDA A

ART UNIT	PAPER NUMBER
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2629

NOTIFICATION DATE	DELIVERY MODE
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07/30/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No.	Applicant(s)	
	10/533,019	DE GREEF, PETRUS MARIA	
	Examiner	Art Unit	
	Shaheda A. Abdin	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 April 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Prior Art

2. Fig. 1-3, 6-8 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Abstract

4. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

The following guidelines illustrate the preferred layout for the specification of a

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utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Objections

5. Claims 1-10 are objected to because of the following informalities: The use of parentheses in claims 1-10 are improper because the parentheses uses only for the reference characters (see MPEP 608.01(M)). Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 3-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Adachi et al.(US Patent No: 6924824).

(1) Regarding claim 1:

Adachi teaches a method of scanning lines in a display (10, Fig. 1) within a frame (one frame, Fig. 5a and 5c together shows one frame period), where driving luminance information provided to the display for each pixel within the frame is divided into subfields (SF1-SFn,) (column 8, lines, 26-27, column 9, lines 25-27) the method including the steps of:

selecting subfields (SF1-SF4) to be used when scanning lines (horizontal lines) in a set of scanning cycles (four horizontal, 4H cycle) equivalent to the number of subfields existing for driving the pixels column (vertical line) (column 11, lines 40-57),

scanning the lines (16 horizontal lines i.e. 0-15) consecutively (0 → 1 → 2 → ... 15) for the set of scanning cycles (16H) (column 2, lines 46-59, Fig. 12),

varying the selection of subfield (SF1-SFn) from line to line (0-15) in each scanning cycle such that no two consecutive line scans use the same subfield (e.g. Fig5

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shows line 2nd scans use SF1, but SF1 is scanned in line 3rd) and no line is scanned using the same subfield twice during the set of scanning cycles (e.g. line 2nd, there is no repeat same subfield) , such that image flicker caused by the subfields is reduced (see Fig.5 and column 9, lines 48-50, also see column 5, lines 57-60, column 11, lines 20-39).

(2) Regarding claim 3:

Adachi teaches the step of varying including selecting the subfields in a consecutive (sequential) order from line to line (based on fig. 12 selection sequence of subfields in consecutive order, column 2, lines 46-59).

(3) Regarding claim 4:

Adachi teaches the step of varying including selecting the subfields (SF1-SFn) in a random order (randomly selected) from line to line until all subfields have been selected (e.g. SF3 → SF1 → SF4 → SF2 (see column 11, lines 40-48) and thereafter repeating the random selection until all lines have been scanned (see column 11, lines 40-58).

(4) Regarding claim 5:

Adachi teaches the subfields having varying (increasing) lengths (column 5, lines 8-35, fig. 17 and fig 18).

(5) Regarding claim 6:

Adachi teaches the subfields being sub frames (sub-frames SF1-SFn) provided

according to a frame length control scheme (e.g. subfield periods are 5H, 9H, 17H, 33H correspond one frame period 64H) (see column 10, lines 43-45).

(6) Regarding claim 7:

Adachi teaches the subfields being sub frames provided according to a frame rate scheme (e.g. N sub-frames correspond to N cycle) (see column 11, lines 48-53)

(7) Regarding claim 8:

Adachi teaches the subfields being provided according to a pulse width modulation scheme (column 9, lines 11-15).

(8) Regarding claim 9:

Adachi teaches the subfields (SF1-SFn) being provided according to a combination of the schemes listed in claims 5, 6 and 7 (see column 5, lines 8-35, column 10, lines 43-45 and column 11, lines 48-53).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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9. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi et al. in view of Tsuchiya et al. (US Pub. No: 2002/0105510 A1).

Regarding claim 2:

Adachi discloses a scan line a subfield to a pixel but does not discloses RMS voltage.

However, Tsuchiya in the same field of endeavor discloses RMS voltage ([0189], [0190], Fig. 2).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate RMS voltage as taught by Tsuchiya applying to the sub-field (sub-frame) of Adachi so that a scan of a line can be including an RMS voltage corresponding to a value of the subfield to a pixel. In this configuration the system will provide a cost reduction and lower power consumption electronic device (Tsuchiya, [0003]).

10. Claims 10 –18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi et al. in view of Okumura et al. (US Patent No: 5844534).

(1) Regarding claims 10 and 18 :

Adachi teaches a driving (driving at 20) luminance information (S1-Sn) including subfields (SF1-SFn for one frame), and supplying the subfields to a line driving unit (30),

Adachi teaches a device for scanning a number of lines G1-Gm in a display within a frame comprising:

a line driving unit (30) arranged to scan each line consecutively (sequentially, $0 \rightarrow 1 \rightarrow 2 \rightarrow \dots 15$) with the information of each pixel on the display in a number of scanning cycles equivalent to the number of subfields existing for driving the pixels (column 9, lines 25-27, and column 10, lines 54-64),
a control unit (e.g. 803; column 8, lines 62-67) arranged to provide variation of the selection of subfield from line to line for each scanning cycle such that no two consecutive line scans use the same subfield (e.g. Fig. 5 shows line 2nd scans SF1, but SF4 is scanned in line 3rd) and no line is scanned using the same subfield twice during the set of scanning cycles (e.g. line 2nd, there is no repeat same sub-field), such that image flicker caused by the different sizes of the subfields is reduced (column 5, lines 57-60), column 9, lines 48-50 and column 11, lines 20-39) (e.g. in the case of Fig. 3, the zeroth scan line cycle, so that any one sub-frame is not written to any one scan line more than once, see column 9, lines 48-50).

Adachi does not teaches a conversion unit for converting received luminance values in to driving luminance information including subfields .

Okumura in the same field of endeavor teaches a conversion unit (14) for converting receiving luminance values in to driving luminance information including subfields (see column 24, lines 1-22).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate a conversion unit (14) as taught by Okumura into the driving unit (20) of Adachi so that the luminance information can be supply to the

subfield and the line driving unit. In this configuration the system would provide a high quality image with reduced power consumption (Okumura, column 4, lines 42-46).

(2) Regarding claim 11:

Adachi teaches the control unit being arranged to select the subfields in a consecutive (sequential) order from line to line (scanning line, $0 \rightarrow 1 \rightarrow 2 \rightarrow \dots 15$) (column 8, lines, 26-27, column 9, lines 25-27).

(3) Regarding claim 12:

Adachi teaches the control unit (20) being arranged to select the subfields ($SF1 \rightarrow SFn$) in a random order from line to line until all subfields have been selected $SF3 \rightarrow SF1 \rightarrow SF4 \rightarrow SF2$) and thereafter to repeat the random selection until all lines have been scanned (column 4, lines 40-58).

(4) Regarding claim 13:

Adachi teaches the subfields having differing lengths (increasing lengths)(column 5, lines 8-35, Fig. 17 and fig 18).

(5) Regarding claim 14:

Adachi teaches the subfields being provided as subframes according to a frame length control scheme (column 10, lines 40-45).

(6) Regarding claim 15:

wherein the subfields are provided as sub frames according to a frame rate control scheme (control same number of scanning cycle which equal to the subfield)

(column 11, lines 48-53).

(7) Regarding claim 16:

Adachi teaches the subfields being provided according to a pulse width modulation scheme (column 9, lines 11-15).

(8) Regarding claim 17:

Adachi teaches the subfields being provided according to a combination of schemes (column 5, lines 8-35, column 10, lines 40-45 and column 11, lines 48-53)

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's discloser.

Hirai (US-5953002 A) discloses a driving method for displaying gradation by changing the amplitude of voltages applied to pixels.

Otobe (US-6144364 A) discloses a display driving method and apparatus for displaying image data.

Kim (US- 6661428 B1) discloses a device and method for controlling Luminance of flat display.

Inquiry

12. Any inquiry concerning this communication should be directed to the examiner at (571) 270-1673 Monday- Friday 7:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chanh Nguyen, can be reached at (557) 272-7772.

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Information regarding the status on an application may be obtained from the Patent Application information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9799 (IN USA OR CANADA) or 571-272-1000.

Any response to this action should be mailed to:

Commissioner of patents and trademarks

Washington, D.C. 20231


Or fax to:

(703)872-9314 (for Technology Center 2600 only)

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06/22/2007

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SUPERVISORY PATENT EXAMINER